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| 10/051,588      | 01/15/2002  | Ali Bani-Hashemi     | 2001P18622US        | 1113             |

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Siemens Corporation  
Intellectual Property Department  
186 Wood Avenue South  
Iselin, NJ 08830

EXAMINER

BAYAT, ALI

ART UNIT PAPER NUMBER

2625

DATE MAILED: 03/18/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/051,588

Applicant(s)

BANI-HASHEMI, ALI

Examiner

Ali Bayat

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 15 January 2002.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5 and 8-16 is/are rejected.
- 7) ☒ Claim(s) 6 and 7 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 April 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 1/15/02 and 6/9/03.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1,5 and 8 are rejected under 35 U.S.C. 102(b) as being anticipated by Reckwerdt et al. (US 5,673,300).

In regard to claim 1, Reckwerdt provides for a performing a computed tomography scan of the patient in a first position to acquire CT data (col.2 lines 17-18, note selected one of projection underlying the planning CT images); using the CT data to create one or more images of the patient in the first position (col.2 lines 18-17, note selected one of projection underlying the planning CT images); preparing the patient to receive treatment delivery in a second position (col.2 lines 17-18, note prior to the radiotherapy); acquiring one or more images of the patient in the first position to the one or more images of the patient in the second position ( col.2 lines 16-18, note one or more radiographic projection taken of the patient immediately prior to radiotherapy); comparing the one or more images of the patient in the first position to the one or more images of the patient in the second position ( col.2 lines 15-20); repositioning the patient until the patient is in substantially the same position as shown in the one or more images of the patient in the first position ( col.2 lines 13-19, note patient misalignment).

With regard to claim 5, Reckwerdt provides for a method, wherein a gated acquisition device is used such that the image of the patient in the second position is

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acquired at the same point of a cycle as the image of the patient in the first position (Fig.7, note elements A and B trace out a single cycle of a sign curve 62, col.6 lines 15-23).

As to claim 8, Reckwerdt provides for a method, wherein one or ore visible markers are added to a surface of the patient to provide landmarks in the image of the patient in the first position to be matched to images of the patient in the second position (Fig.12 element 124, col.7 lines 17-20).

***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Reckwerdt et al. (US 5,673,300).

With regard to claims 2-3, Reckwerdt provides for a method of correcting for patient misalignment between the time of a planning CT image and radiotherapy (col.2 lines13-16). Reckwerdt does not provide expressly for the patient is repositioned to be within 1 mm/ 1 degree of the one or more images of the patient in the first position. At time of the invention, it would have been obvious to a person of the ordinary skill in the art to reposition the patient within 1 mm/ 1 degree of the one or more images of the patient in the first position. Applicant has not disclosed that repositioning the patient within 1 mm/ 1 degree on the of the one or more images of the patient in the first

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position, provides an advantage, is used for a particular purpose or solves a stated problem. One of ordinary skill in the art, furthermore, would have expected Applicant's invention to perform equally well with either repositioning the patient taught by Reckwerdt or the claimed 2 and 3 repositioning the patient 1 mm/ 1 degree, because both repositioning the patient perform the same function of preventing the patient of receiving the radiotherapy in wrong location.

3. Claims 4,9-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Reckwerdt et al. (US 5,673,300) in view of Cosman (US 2004/0138556 A1).

In regard to claim 9, Reckwerdt provides for a computer tomography machine that generates CT data of the patient in a first position (col.2 lines 17-18, note selected one of projection underlying the planning CT images); a processor capable of generating one or more images of a patient in a first position from the CT data (col.2 lines 17-18, note a processor is inherent in Computer Tomography or CT machine); a memory configured to at least temporarily store the one or more images of a patient in a first position from the CT data ( col.2 lines 17-18, note memory is inherent in Computer Tomography or CT machine); comparing the one or more images of the patient in the first position to the one or more images of the patient in the second position ( col.2 lines 15-20); repositioning the patient until the patient is in substantially the same position as shown in the one or more images of the patient in the first position ( col.2 lines 13-19, note patient misalignment), Reckwerdt does not expressly provide for one or more video cameras located in the area where the patient is to receive radiotherapy treatment, where one or more cameras acquiring one or more images of the patient in a second

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position. Cosman provides for one or more video cameras for acquiring one or more images of the patient (Fig.1 elements 12 and 16, paragraph 23 lines 3-16). The prior art of Reckwerdt and Cosman are combinable because they are from the same field of endeavor (treatments in relation to a patient's anatomy). At the time of the invention, it would have been obvious to a person of ordinary skill in the art to incorporate the teaching of Cosman (video cameras) with the system and method of Reckwerdt. The suggestion/motivation for doing so would have been, because the invention of Cosman provides for a system and method for medical instrument navigation by optically tracking the positions of instruments used during surgery or other treatments in relation to a patient's anatomy see paragraph 2.

With regard to claim 4, see the rejection of claim 9. It recites similar limitation as claim 4. Hence it is similarly analyzed and rejected.

In regard to claim 10, Reckwerdt provides for a computer tomography machine that generates CT data of the patient in a first position (col.2 lines 17-18, note selected one of projection underlying the planning CT images). Reckwerdt does not expressly provide for one or more video cameras are placed to create a set of stereo video images of the patient in the second position, and a set of stereo goggles are used which are synchronized with the stereo video images of the patient in the second position which gives three-dimensional stereo perception. Cosman provides for one or more video cameras for acquiring one or more images of the patient and a set of stereo goggles (Fig.1 elements 12 and 16, paragraph 23 lines 3-16). The prior art of Reckwerdt and Cosman are combinable because they are from the same field of endeavor

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(treatments in relation to a patient's anatomy). At the time of the invention, it would have been obvious to a person of ordinary skill in the art to incorporate the teaching of Cosman (video cameras) with the system and method of Reckwerdt. The suggestion/motivation for doing so would have been, because the invention of Cosman provides for a system and method for medical instrument navigation by optically tracking the positions of instruments used during surgery or other treatments in relation to a patient's anatomy see paragraph 2.

With regard to claims 11-12 and 14-15, see the rejection of claim 9. They recite similar limitations as claim 9. Hence they are similarly analyzed and rejected.

As to claims 13 and 16, see the rejection of claim 10. They recite similar limitations as claim 10. Hence they are similarly analyzed and rejected.

#### ***Allowable Subject Matter***

4. Claims 6-7 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

#### **Contact Information**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ali Bayat whose telephone number is 703-306-5915. The examiner can normally be reached on M-Thur 9:00-7:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bhavesh Mehta can be reached on 703-3085246. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Ali Bayat *AB*  
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3/11/05

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